

ABSTRACT OF THE DISCLOSURE

A method of evaluating of a measuring electron microscope has the steps of setting such modes of operation of a microscope, which will be used for subsequent measurements of sizes and line edge roughness, introducing a test-object which has a known straight edge into a chamber of objects of the microscope, orienting the test object on a stage of the microscope so that the edge of the test object is arranged vertically, scanning the test object with an electron beam, obtaining an image of the edge of the test object and saving the image in a digital form, localizing the edge of the test object on the image on each line of scanning, producing and storing a set of values of a coordinate $X(i)$ which correspond to a position of the edge of an i -th line of scanning, approximating the sets of values $X(i)$ with a straight line, calculating deviations $\Delta(i)$ of coordinates $X(i)$ from a straight line on each line of scanning, analyzing a set of values of the deviations $\Delta(i)$, calculating an average and a maximal deviation, and if a maximum value of deviation exceeds an acceptable tolerance of measurement, making a conclusion that the microscope can not be used for measurements and needs an adjustment.